ABSTRACT

The present invention provides methods for producing a viral vector comprising a membrane protein that binds to sialic acid as a component of the envelope, using neuraminidase (NA) derived from Gram-positive bacteria. The methods comprise the steps of culturing cells producing a viral vector in the presence of an NA from Gram-positive bacteria, and recovering the produced virus. The methods of this invention enable the production of high titer virus at high cost performance. Such a viral vector is capable of transferring genes at high efficiency into cells such as blood cells and hematopoietic cells, including hematopoietic stem cells, and mucous cells including mucoepithelial cells, those not amenable to gene transfer by conventional methods, and therefore should be useful as a vector for gene therapy.